

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Title: "System and Method for Automating Association of Retail Items to Support Shopping Proposals"

Applicant(s): Reiner Kraft et al.

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Board of Patent Appeals and Interferences
Commissioner of Patents and Trademarks
Washington, D.C. 20231

SUPPLEMENTAL APPEAL BRIEF

Dear Sir:

This Supplemental Appeal Brief is submitted in response to the
Notification of Non-Compliant Appeal Brief of June 19, 2006.

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(1) Real Party in Interest

The real party in interest is International Business Machines Corporation.

(2) Related Appeals / Interferences

No other appeals or interferences exist that relate to the present application or appeal.

(3) Status of Claims

Claims 1 - 20 are pending and remain in the application. In the Final Office Action of March 1, 2004, claims 1-20 have been indicated to be finally rejected as being unpatentable over Jammes et al., U.S. Patent No. 6,484,149, hereafter Jammes.

(4) Status of Amendments

No amendments are outstanding.

(5) Summary of Claimed Subject Matter

5.1. Summary of the subject matter of independent claim 1

The present invention relates in general to the field of electronic commerce. More specifically, in the context of this invention, a business can be a group of merchants whose retail items can be combined based on predetermined attributes. Refer to page 1, lines 7-11.

The present invention enables online retail businesses to offer automated online shopping advice based on the shopper's current browse or for-purchase selection. An online shopping site can make suggestions of the best match items for the shoppers' current browse or for-purchase

selections, potentially eliminating the need for personalized customer service, online chat advice, or store assistants. Refer to page 7, lines 2-7.

To this end, the present invention automatically produces web pages or contents that enhance the potential sale of selected items by associating other products that are linked via a pre-determined rule set. An exemplary rule set describes how items can be combined. The automated association enables retailer shopping web sites to offer shopping proposals based on these associations. Refer to page 7, lines 19-21.

The shopping server proposal system of the present invention comprises an add-on and an enhancement to the online retailer's existing database system. The existing catalog of items is analyzed based on a set of predefined rules for a given retail store (e.g. furniture, clothing, electronics, etc.). This analysis determines which of the items in the catalog are related to other items in the catalog. For example, one of the rules may define that any outdoor clothing item for men that is not underwear, can be combined with any other outdoor clothing item for men if the colors of the items match. The result of this analysis is a new set of relations of catalog items including a set of properties (e.g., color, size, category, etc.). These relations are written into the retailer's existing database system. The mechanism for assembling this information, based on a set of predefined rules, is independent of the retailer or the retailer's industry (e.g., furniture, clothing, electronics, etc.) by using intermediate formats. Refer to page 8, lines 4-19.

The present system may utilize additional information available during a shopper's shopping experience, i.e., when the shopper browses the online

store and views a selection, to enable the online retailer to provide additional information to the shopper based on the user's browsing history or previous known online events of the same user. For example, if the shopper selects a shirt from the retailer's list of items, the retailer's server may return a web page containing information about the selected item. On a conventional web page rendering, the page only contains links to the retailer's catalog. However, according to the present invention, the page can contain information about related items, such as a matching pair of trousers, socks, etc. This additional information can be presented in a variety of ways. For example, this information can be incorporated into the Web page with the focus on the original selected item, or additional windows or animation can be used, to enhance the presentation of the additional information. Refer to page 8, line 21 – page 8, line 11.

The present system provides the retail businesses with a competitive edge by enabling them to offer automated shopping advice to solve the users' problems of finding related and matching items, and by providing a list of related items based on the selected item's properties (e.g., color, size, etc.). The system is expected to increase sales as shoppers are provided with additional opportunities to select and buy items. Refer to page 9, lines 13-18.

Buyers are more likely to return to a site if they enjoy the shopping experience. Using the present system, shoppers are made aware of items they may not encounter in conventional online stores, by manually browsing and searching the inventory. Customer satisfaction is very likely to increase which will have a positive effect on the online traffic. Refer to page 9, line 20 – page 10, line 2.

With specific reference to claim 1, it recites a method 610 of providing a shopping proposal that enhances a merchant's existing database system (FIG. 5). Method 610 comprises analyzing a catalog of items in the existing database system 350 (refer to page 8, lines 9-11), based on a set of predefined rules that correlate the items under certain conditions, to determine which of the items in the catalog are related to other items in the catalog, and to define a new set of relations between the catalog items. Refer to page 8, lines 13-16.

Each rule comprises an evidence and a conclusion, and leads to new associations between the catalogue items. Refer to page 23, lines 5-7.

Method 610 applies the new set of relations to the existing database system 350 to update the database system 350, by providing the new associations of the items in the database system 350. Refer to page 24, lines 20-21. The method generates a shopping advisor knowledge database 400 that comprises the new associations for each item of the existing database system 350. Consequently, method 610 offers automated, dynamic, and personalized shopping advice to the shopper based on a shopper query, by retrieving the new associations in the shopping advisor knowledge database, and items from the existing database system that have been related by the new associations.

5.2. Summary of the subject matter of independent claim 9

While claim 1 exemplifies the present invention in connection with a method for providing a shopping proposal that enhances a merchant's existing database system, claim 9 corresponds to claim 1, and exemplifies

the present invention in connection with a shopping server proposal system for providing a shopping proposal that enhances a merchant's existing database system.

5.3. Summary of the subject matter of independent claim 17

While claim 1 exemplifies the present invention in connection with a method for providing a shopping proposal that enhances a merchant's existing database system, claim 17 corresponds to claim 1, and exemplifies the present invention in connection with a computer program product for providing a shopping proposal that enhances a merchant's existing database system.

(6) Grounds of Rejection to be Reviewed on Appeal

The issue for review is whether claims 1 - 20 are anticipated by Jammes et al., U.S. Patent No. 6,484,149.

(7) Arguments

A. Rejection in the Office Action

The issue under review is whether claims 1 - 20 are anticipated by Jammes et al., U.S. Patent No. 6,484,149.

As ground for the anticipation rejection of claims 1 - 20, the office action presents the following arguments:

"Claims 1-20 are rejected under 35 U.S.C. 102(e) as being anticipated by Jammes et al. (6,484,149). Jammes et al. discloses a system and method of providing a shopping proposal that enhances a merchant's existing database system (via organizing and

advertising descriptions of product inventory), and a computer program for doing the same with the steps of:

analyzing a catalog of items in the existing database system (database 116) **based on a set of predefined rules** that correlate the items under certain conditions, to determine which of the items in the catalog are related to other items in the catalog (via lists of related products corresponding to group to be expanded in the data record), and to define a new set of relations between the catalog items (via modifying relationship information) (col. 11, lines 37-53; col. 16, lines 27-41),

wherein each rule includes an evidence and a conclusion (**via event handlers**).

applying the new set of relations to the existing database system to update the database system **by providing new associations of the items in the database system** (col. 39, lines 22-31; col. 40-22-38),

generating a shopping advisor knowledge database (via relational database server 114) that comprises the new associations for each item of the existing database system (for example cross sale)

and offering automated, dynamic, and personalized shopping advice to the shopper based on a shopper query by retrieving links to items from the database system that have been related by the new associations (via generating messages to a consumer; col. 40, lines 56-60).

Jammes et al. further discloses analyzing the catalog of items in the existing database system is based on a set of predefined rules for a given line of items (as illustrated in Figures 4 and 7), defining the new set of relations includes defining a set of properties for the catalog items (by defining relationships between products and groups). The defining set further includes defining one or more of color, size or category (col. 40, lines 1-12).

Jammes et al. also discloses applying the new set of relations includes assembling catalog items based on a set of predefined rules that is independent of the merchant's industry (via traffic analysis database logs), and applying the new set of relations further includes using an intermediate format to list items that have been related by the new associations (as illustrated in Figure 20B). Jammes et al. further discloses the steps of using additional information available during a shopping session (via consumer's browsing table or product table). Jammes et al. further discloses a finder module (via scanning the request message for a cookie identifier) and a response creation

module (via creating new record in the product order table)." Emphasis added.

Applicants respectfully traverse this rejection and submit that claims 1 - 20 are not anticipated by Jammes, and are patentable thereover. In support of this position, Applicants submit the following arguments:

B. Legal Standard for Lack of Novelty (Anticipation)

The standard for lack of novelty, that is for "anticipation," is one of strict identity. To anticipate a claim for a patent, a single prior source must contain all its essential elements, and the burden of proving such anticipation is on the party making such assertion of anticipation. Anticipation cannot be shown by combining more than one reference to show the elements of the claimed invention. The amount of newness and usefulness need only be minuscule to avoid a finding of lack of novelty.

The following are two court opinions in support of Applicant's position of non anticipation, with emphasis added for clarity purposes:

- "Anticipation under Section 102 can be found only if a reference shows exactly what is claimed; where there are differences between the reference disclosures and the claim, a rejection must be based on obviousness under Section 103." *Titanium Metals Corp. v. Banner*, 778 F.2d 775, 227 USPQ 773 (Fed. Cir. 1985).
- "Absence from a cited reference of any element of a claim of a patent negates anticipation of that claim by the reference." *Kloster Speedsteel AB v. Crucible Inc.*, 793 F.2d 1565, 230 USPQ 81 (Fed. Cir. 1986), on rehearing, 231 USPQ 160 (Fed. Cir. 1986).

C. Application of the Legal Standard of Anticipation to Representative

Claim 1

Applicants will detail the following arguments that are summarily outlined in the following table, in response to the office action relative to the allowance of the representative claim 1.

<u>CLAIM 1</u>	<u>OFFICE ACTION (JAMMES)</u>	<u>ARGUMENTS</u>
1. A method of providing a shopping proposal that enhances a merchant's existing database system, comprising:	system and method of providing a shopping proposal that enhances a merchant's existing database system (via organizing and advertising descriptions of product inventory), and a computer program for doing the same with the steps of:	
analyzing a catalog of items in the existing database system based on <u>a set of predefined rules that correlate the items under certain conditions</u> , to determine which of the items in the catalog are related to other items in the catalog, <u>and to define a new set of relations between the catalog items</u> ;	<u>analyzing a catalog of items</u> in the existing database system (database 116) based on a set of predefined rules that correlate the items under certain conditions, <u>to determine which of the items</u> in the catalog <u>are related to other items in the catalog</u> (via lists of related products corresponding to group to be expanded in the data record), <u>and to define a new set of relations</u> between the catalog items (via modifying relationship information) (col. 11, lines 37-53; col. 16, lines 27-41),	(1) The extraction of relationships in Jammes is <u>not derived from a rule-based analysis</u> . (2) Jammes does not define a new set of relations <u>derived from the rule-based analysis</u> .

<u>wherein each rule comprises an evidence and a conclusion, and leads to new associations between the catalogue items;</u>	wherein each rule includes an evidence and a conclusion (<u>via event handlers</u>).	(3) <u>Each rule in Jammes does not lead to new associations</u> between the items.
<u>applying the new set of relations to the existing database system to update the database system by providing the new associations of the items in the database system;</u>	<u>applying the new set of relations to the existing database system to update the database system by providing new associations of the items in the database system</u> (col. 39, lines 22-31; col. 40-22-38),	(4) Jammes provides for the addition of <u>new records</u> but not new associations.
<u>generating a shopping advisor knowledge database that comprises the new associations for each item of the existing database system; and</u>	generating a shopping advisor knowledge database (via relational database server 114) that comprises the new associations for each item of the existing database system (for example cross sale),	(5) Jammes does not generate a shopping advisor database that is different from the existing database. <u>The database server 114 does not qualify as such a database.</u>
<u>offering automated, dynamic, and personalized shopping advice to the shopper based on a shopper query, by retrieving the new associations in the shopping advisor knowledge database and items from the existing database system that have been related by the new associations.</u>	<u>offering automated, dynamic, and personalized shopping advice to the shopper based on a shopper query by retrieving links to items from the database system that have been related by the new associations</u> (via generating messages to a consumer; col. 40, lines 56-60).	(6) Jammes does not retrieve <u>new rule-based associations from the database server 114.</u>

C. 1. The extraction of relationships in Jammes is not derived from a rule-based analysis.

The definition of the term "rule" is quite important to the understanding of the present invention. More specifically, a rule is defined in the specification and recited in the claim as comprising "an evidence and a conclusion." This definition clearly distinguishes the term "rule" and the term "relationship."

It should be amply clear that relationship should not be misunderstood as meaning a rule. As an example, a relationship could be represented by a link between items, which relationship is set and does not change automatically unless the items are changed or their categorization is changed.

On the other hand, the conclusion of the rule automatically changes when the evidence changes. Such flexibility is important in that it allows new associations to be created on a real time basis for each item of the existing database.

To illustrate the importance of the rule-based analysis, let us assume that a new item is added to the existing database. Jammes does not automatically execute the rules in order to derive new associations between this new item and the remaining items of the existing database. Jammes handles the addition of new products, manually, in the following manner:

"To facilitate such cross sales, a merchant entering information about a new product can select a cross-sales option, resulting in the

presentation of a list of existing products. The merchant can then select one or more related products from a list of existing products. Once one or more related products have been selected and the merchant clicks the okay button 1350, a new record is added to the relationship table for each product selected." Reference is made to column 40, lines 45 - 49, with emphasis added.

C.2. Jammes does not define a new set of relations derived from the rule-based analysis.

As presented earlier, Jammes does not define the relationships between the items from a rule-based analysis. Rather, in Jammes, the "store management control uses the relationship data to direct the tree structure control 304 to construct a local data structure representing the hierarchy of groups of an electronic store, thus enabling the tree structure control 304 to render (i.e., draw graphical and textual elements of) the left pane 308 of the store design user interface 310." Reference is made to column 11, lines 44 - 50, with emphasis added.

In other terms, Jammes does no create new relations but rather "renders" or represents the existing relationships by a local data structure.

C.3 Each rule in Jammes does not lead to new associations between the items.

The office action refers to the "event handlers" as disclosing that each rule includes an evidence and a conclusion. Applicants respectfully traverse this analogy which remains unclear to Applicants. Event handlers are described in Jammes as follows:

"Event-handling routines, or event handlers, are collections of executable computer instructions designed to be executed in response to an event (i.e., a particular condition or state of a computer system). Instructions of an event handler are executed when an associated event occurs." Reference is made to column 13, lines 20 - 25.

In addition, it is not sufficient that each rule comprise an evidence and a conclusion for Jammes to anticipate claim 1, but rather, as recited in claim 1, **each rule leads to new associations between the catalog items**. As submitted herein, **Jammes does not teach creating new associations** based on rules; **rather Jammes teaches a new representation of existing relationships**.

C.4 Jammes provides for the addition of new records but not new associations.

The office action refers to the following text in Jammes as teaching the step of: "applying the new set of relations to the existing database system to update the database system by providing new associations of the items in the database system (col. 39, lines 22-31; col. 40, lines 22-38)":

"If, in the step 1414, it is determined that a parent group was not selected, the instructions of the okay button 1316 terminate in the step 1412. If, however, a parent group was selected, then, in a next step 1416, a database command is generated that is designed to add a new record to the relationship table 202. The database command specifies, for example, a Related_ID field equal to the ID value generated for the new group, a Relationship field equal to 'C' (e.g., 'contained in'), and an ID field equal to the Group_ID of the parent group." Reference is made to Column 39, lines 22-31 (Jammes).

Though this exemplary excerpt uses the terms “new” and “relationship”, it does not teach applying the new set of relations by providing the new associations (it being understood, as presented earlier that the new associations were generated based on rules). More specifically, this excerpt from Jammes shows how a new record is added; but the question remain, where does this excerpt teach applying each rule to this new record to generate new associations between this new record and existing records? Jammes does not teach the generation of such new associations.

C.5 Jammes does not generate a shopping advisor database that is different from the existing database.

The office action refers to Jammes’ “relational database server 114” represents a shopping advisor. Applicants respectfully traverse this interpretation and submit that the database server 114 does not qualify as a database that comprises the new associations for each item of the existing database system.

In support of this assertion, Applicants make reference to the following definition of the database server 114 in Jammes:

“In a preferred embodiment, the relational database server 114 utilizes open database connectivity (ODBC).

Relational database servers 114 utilizing ODBC are known in the art. One function of such relational database servers is to provide to application programs a common query interface to interact with multiple database systems having different query interfaces. Methods for providing such common query interfaces are not within the scope of this invention and will not be further discussed.” Reference is made to column 8, lines 50 -59.

C.6 Jammes does not retrieve new rule-based associations from the database server 114.

Following the previous definition provided in the office action that the database server 114 in Jammes is a shopping advisor knowledge database, Applicants submit that Jammes does not retrieve two sets of items:

- (1) The first set of items includes the new, rule-based associations that are not retrieved from the server 114 (as defined in Jammes).
- (2) In addition to this first set of items, the second set of items includes items from the existing database system.

Though Jammes teaches retrieving items from the existing database system, it does not retrieve both the first and the second sets of items.

Conclusion

To conclude, independent claim 1 is not anticipated by Jammes, and as a result, claim 1 and the claims dependent thereon are allowable, and such allowance is respectfully requested.

D. Independent Claims 9 and 17 and their Dependent Claims

Applicants submit that the independent claims 9 and 17 are also allowable for similar reasons as presented earlier in favor of allowance of claim 1, for reciting subject matter that generally corresponds to that claim 1. Consequently, independent claims 9 and 17 are not anticipated by

Jammes, and the allowance of these claims and the claims dependent thereon is respectfully requested.

(8) Amendment of Claim 4

The office action objected to claim 4 for containing a minor informality that has been corrected. Claim 4 is now amended as follows:

4. The method according to claim 3, wherein defining a set of properties includes defining ~~and~~ one or more of color, size, or category.

Respectfully submitted,

Date: July 8, 2006
Samuel A. Kassatly Law Office
20690 View Oaks Way
San Jose, CA 95120
Tel.: (408) 323-5111
Fax: (408) 323-5112



Samuel A. Kassatly
Attorney for Applicants
Reg. No. 32,247

APPENDIX A
CLAIMS ON APPEAL

1. A method of providing a shopping proposal that enhances a merchant's existing database system, comprising:

analyzing a catalog of items in the existing database system based on a set of predefined rules that correlate the items under certain conditions, to determine which of the items in the catalog are related to other items in the catalog, and to define a new set of relations between the catalog items;

wherein each rule comprises an evidence and a conclusion, and leads to new associations between the catalogue items;

applying the new set of relations to the existing database system to update the database system by providing the new associations of the items in the database system;

generating a shopping advisor knowledge database that comprises the new associations for each item of the existing database system; and

offering automated, dynamic, and personalized shopping advice to the shopper based on a shopper query, by retrieving the new associations in the shopping advisor knowledge database, and items from the existing database system that have been related by the new associations.

2. The method according to claim 1, wherein analyzing the catalog of items in the existing database system is based on a set of predefined rules for a given line of items.

3. The method according to claim 1, wherein defining the new set of relations includes defining a set of properties for the catalog items.

4. The method according to claim 3, wherein defining a set of properties includes defining one or more of color, size, or category.
5. The method according to claim 4, wherein applying the new set of relations includes assembling catalog items based on a set of predefined rules that is independent of the merchant's industry.
6. The method according to claim 5, wherein applying the new set of relations includes using an intermediate format to list items that have been related by the new associations.
7. The method according to claim 1, further including using additional information available during a shopping session.
8. The method according to claim 7, wherein using additional information includes using information based on any one or more of: the shopper's browsing history or previous purchases.
9. A shopping server proposal system that enhances a merchant's existing database system, comprising:
 - a terminology conversion module that communicates with the existing database system, and having as input a ruleset, for outputting a terms mapping document that maps terms of the database system to terms of the ruleset;
 - an analysis and relation creation module connected to the terminology conversion module for receiving the terms mapping document and for analyzing a catalog of items in the existing database system based

on the terms mapping document, to determine which of the items in the catalog are related to other items in the catalog, and to define a new set of relations between the catalog items;

wherein each rule in the ruleset comprises an evidence and a conclusion that leads to new associations between the catalogue items, and that correlates the items under certain conditions;

the analysis and relation creation module further applying the new set of relations to the existing database system to update the database system by providing the new associations of the items in the database system;

a shopping advisor knowledge database that comprises the new associations for each item of the existing database system; and

a shopping server that offers an automated, dynamic, and personalized shopping advice to the shopper based on a shopper query, by retrieving the new associations in the shopping advisor knowledge database, and items from the database system that have been related by the new associations.

10. The system according to claim 9, wherein the shopping server includes a request analysis module, a relation finder module, and a response creation module.

11. The system according to claim 10, wherein the request analysis module receives an incoming request and identifies currently selected items based on the request.

12. The system according to claim 11, wherein the relation finder module retrieves all related items by issuing a query statement, based on the currently selected items identified by the request analysis module.
13. The system according to claim 12, wherein the relation finder module retrieves a result set of related items from the database system that includes references to the related items and to all attributes of the related items.
14. The system according to claim 13, wherein the relation finder module delivers the result set to the response creation module.
15. The system according to claim 14, wherein the response creation module creates a dynamic response to the incoming request based on the result set of related items.
16. The system according to claim 15, wherein the dynamic response is rendered in a browsable form.
17. A computer program product for enhancing a merchant's existing database system, comprising:
 - a terminology conversion module that communicates with the existing database system, and having as input a ruleset, for outputting a terms mapping document that maps terms of the database system to terms of the ruleset;
 - an analysis and relation creation module connected to the terminology conversion module for receiving the terms mapping document and for analyzing a catalog of items in the existing database system based

on the terms mapping document, to determine which of the items in the catalog are related to other items in the catalog, and to define a new set of relations between the catalog items;

wherein each rule in the ruleset comprises an evidence and a conclusion that leads to new associations between the catalogue items, and that correlates the items under certain conditions;

the analysis and relation creation module further applying the new set of relations to the existing database system to update the database system by providing the new associations of the items in the database system; and

a shopping advisor knowledge database that comprises the new associations for each item of the existing database system; and

a shopping server that offers an automated, dynamic, personalized shopping advice to the shopper based on a shopper query, by retrieving the new associations in the shopping advisor knowledge database, and items from the database system that have been related by the new associations.

18. The computer program product according to claim 17, wherein the shopping server includes a request analysis module, a relation finder module, and a response creation module.

19. The computer program product according to claim 18, wherein the request analysis module receives an incoming request and identifies currently selected items based on the request; and

wherein the relation finder module retrieves all related items by issuing a query statement based on the currently selected items identified by the request analysis module.

20. The computer program product according to claim 19, wherein the relation finder module retrieves a result set of related items from the database system that includes references to the related items and to all attributes of the related items;

wherein the relation finder module delivers the result set to the response creation module;

wherein the response creation module creates a dynamic response to the incoming request based on the result set of related items; and

wherein the dynamic response is rendered in a browsable form.

APPENDIX B
EVIDENCE

None